

Whispers from the Dark Universe - Particles & Fields in the Gravitational Wave Era

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WHISPERS FROM THE DARK UNIVERSE – PARTICLES & FIELDS IN THE GRAVITATIONAL WAVE ERA

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Revisiting Isocurvature Evolution

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While adiabatic perturbations explain CMB and large-scale structure data very well, isocurvature fluctuations could still play a subdominant role. The observation of such a perturbation could hint at more complex cosmic histories such as multi field inflation scenarios. Interactions between the primordial fluids would determine the isocurvature amplitudes in the present epoch.

We revisit the evolution of isocurvature and introduce a novel approach to evaluate it, returning to an easy-to-implement transfer matrix depiction. We show that the approach is equivalent to previous formulations of isocurvature evolution in the separate-universe picture and give examples for cosmic histories with interacting fluids or a curvaton.

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